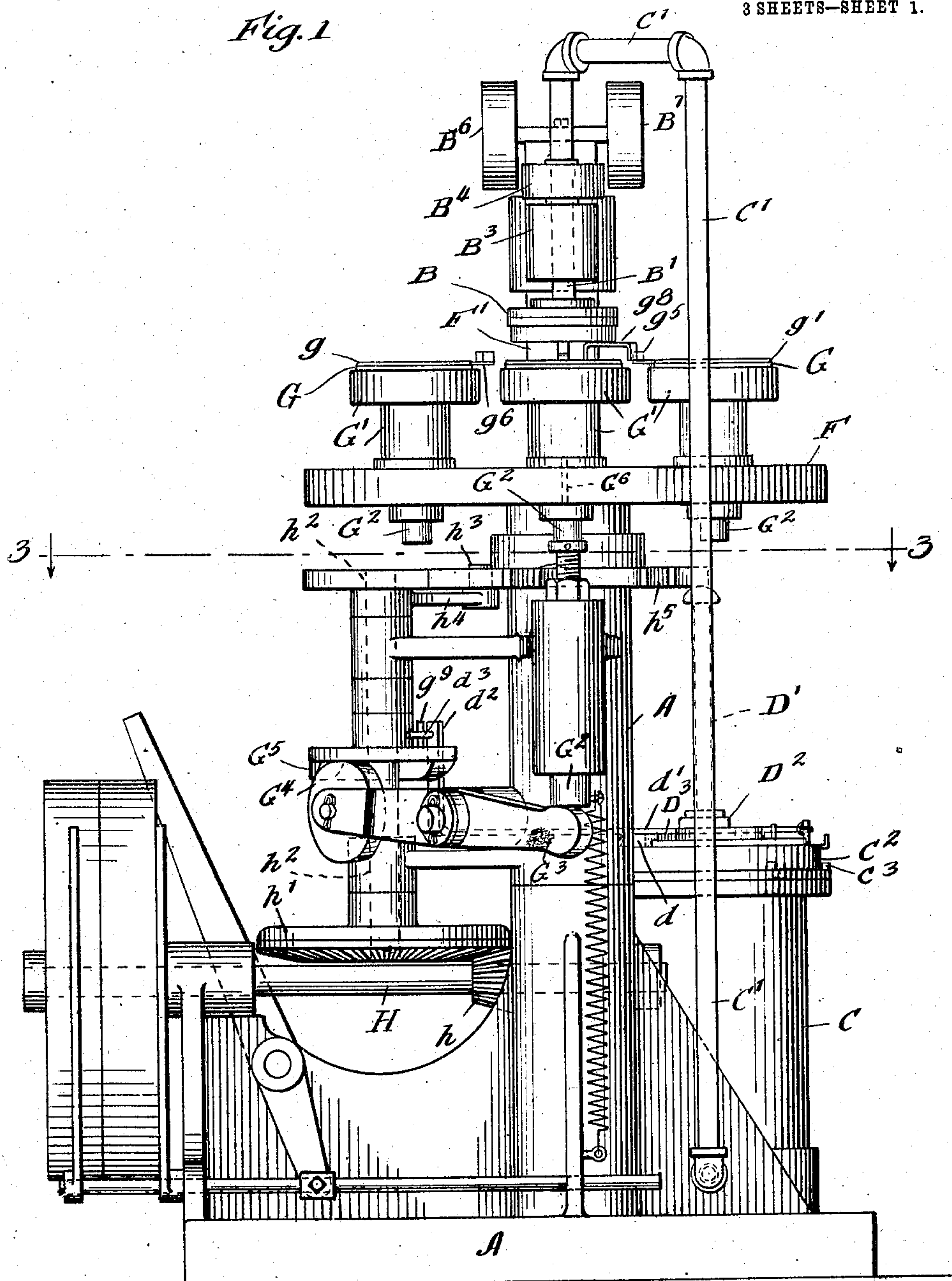


930,802.

3 SHEETS—SHEET 1.

Fig. 1



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CAN COVER COATING MACHINE.
APPLICATION FILED NOV. 12, 1906.

Patented Aug. 10, 1909.

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3 SHEETS—SHEET 2.

Fig. 2

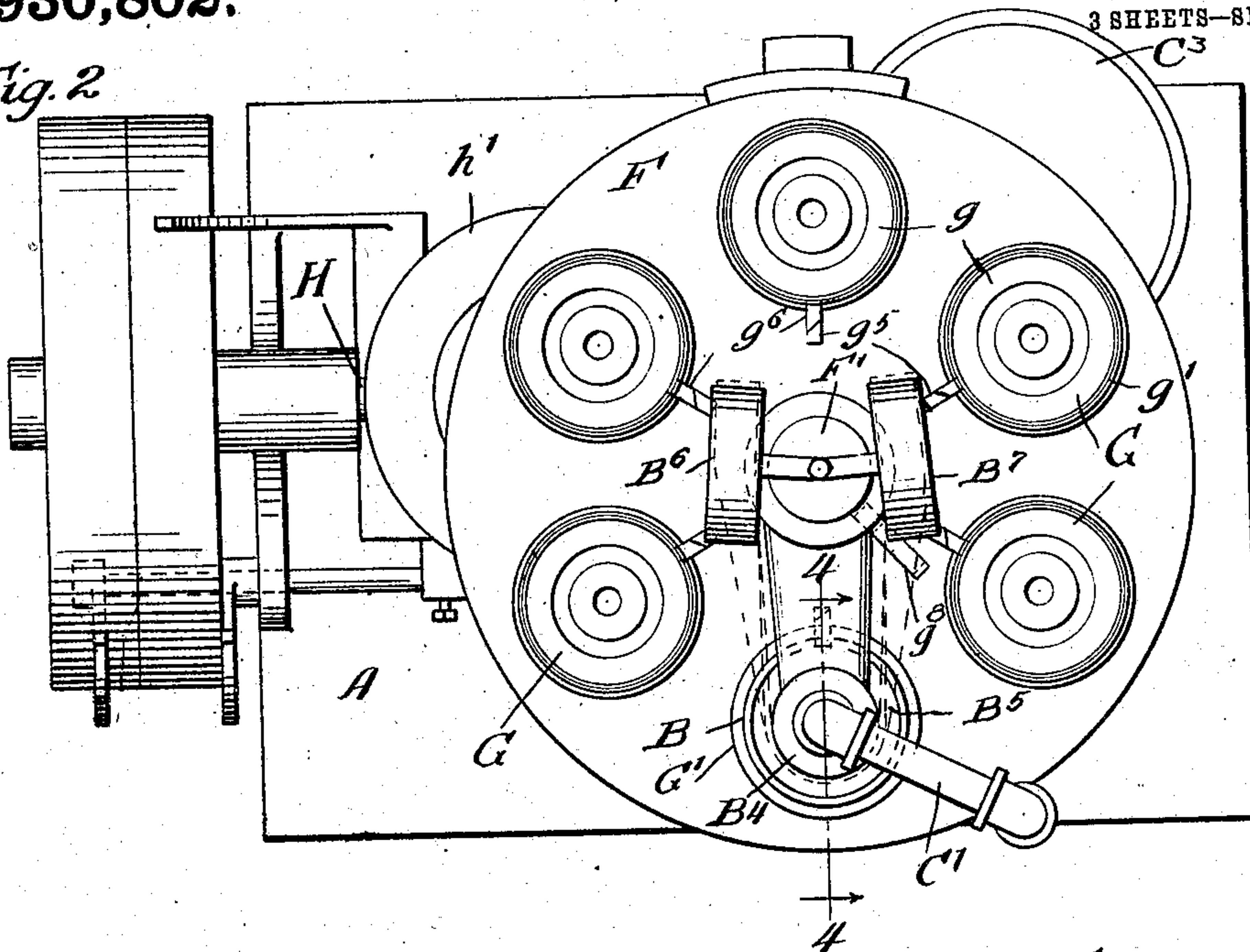
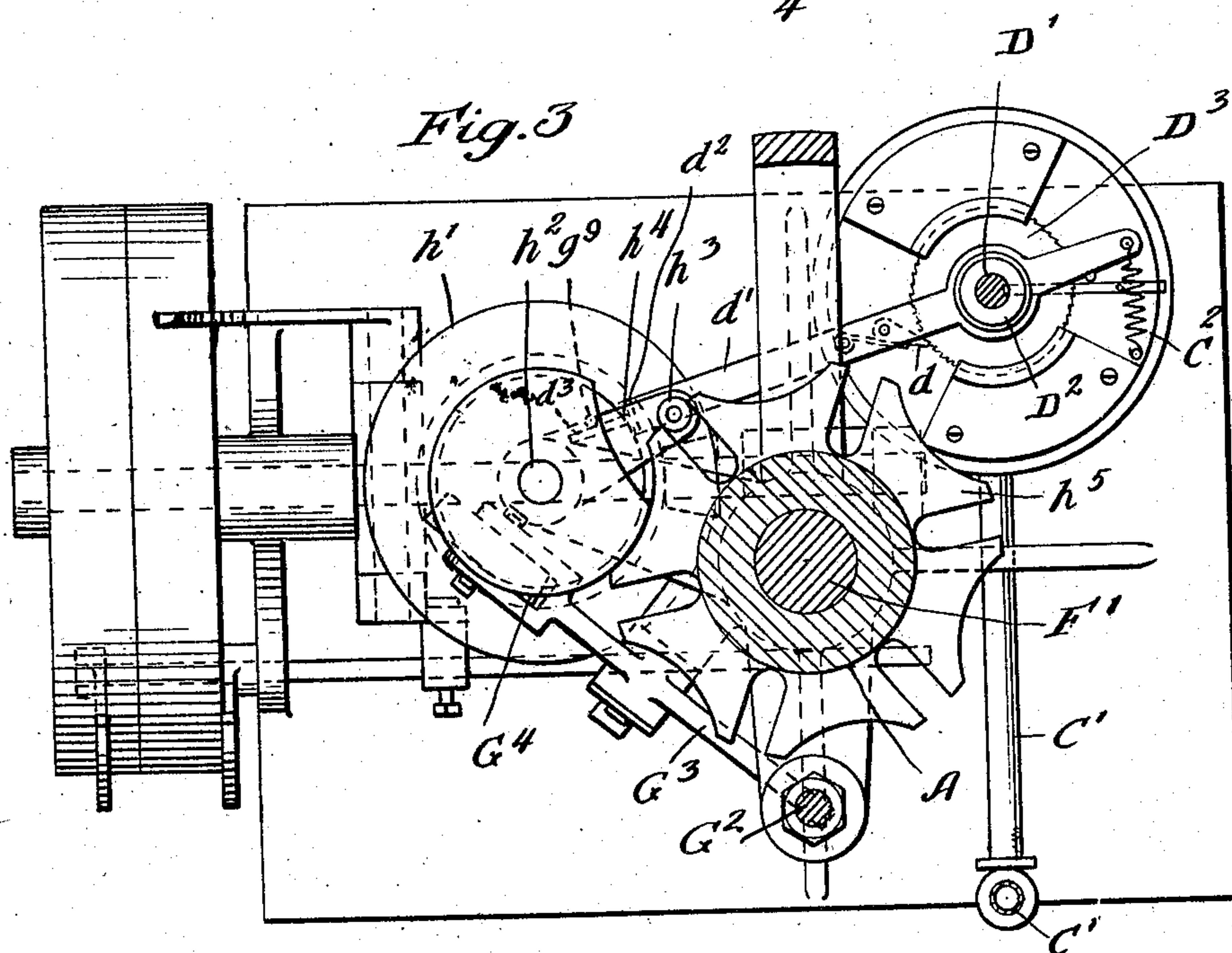


Fig. 3



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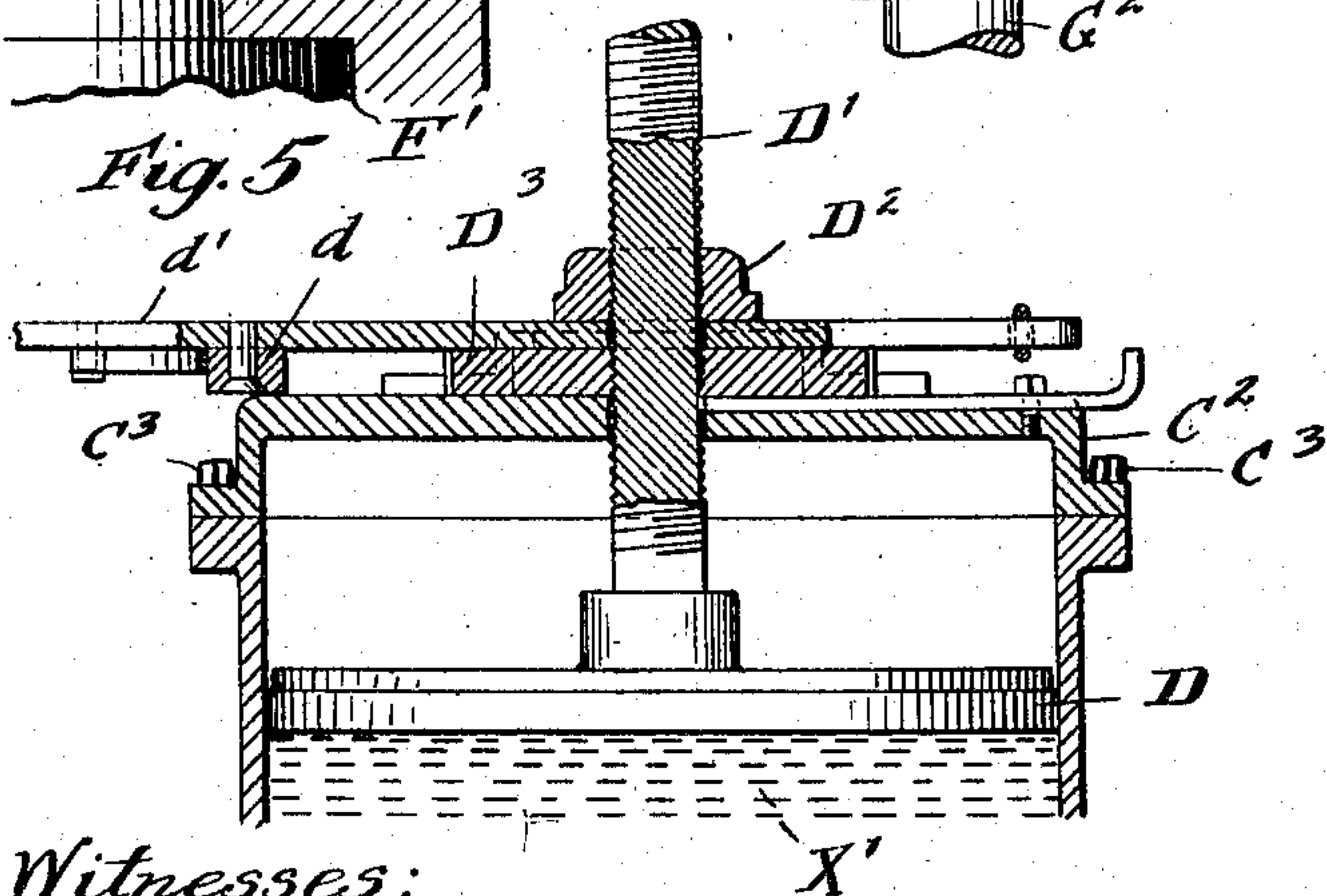
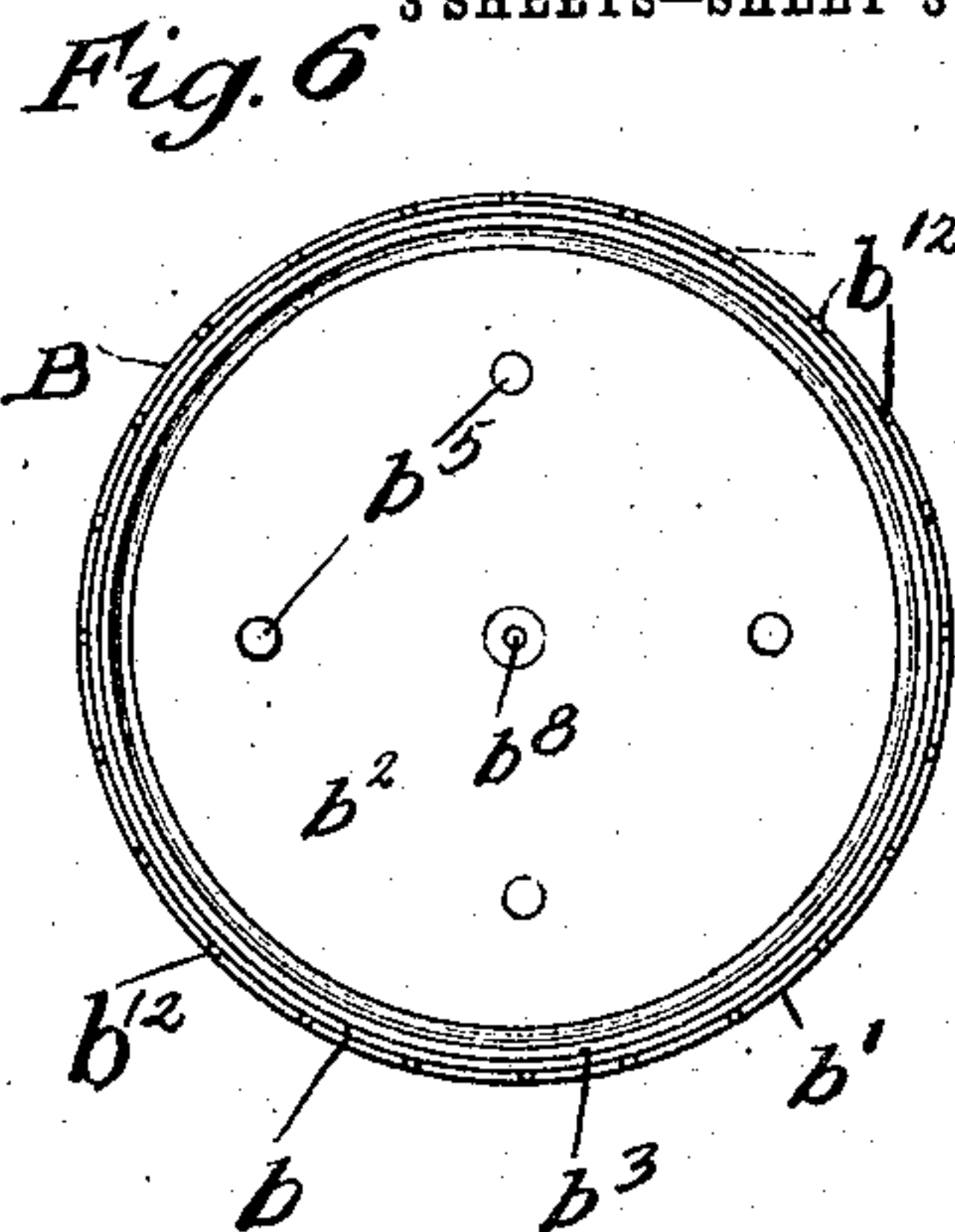
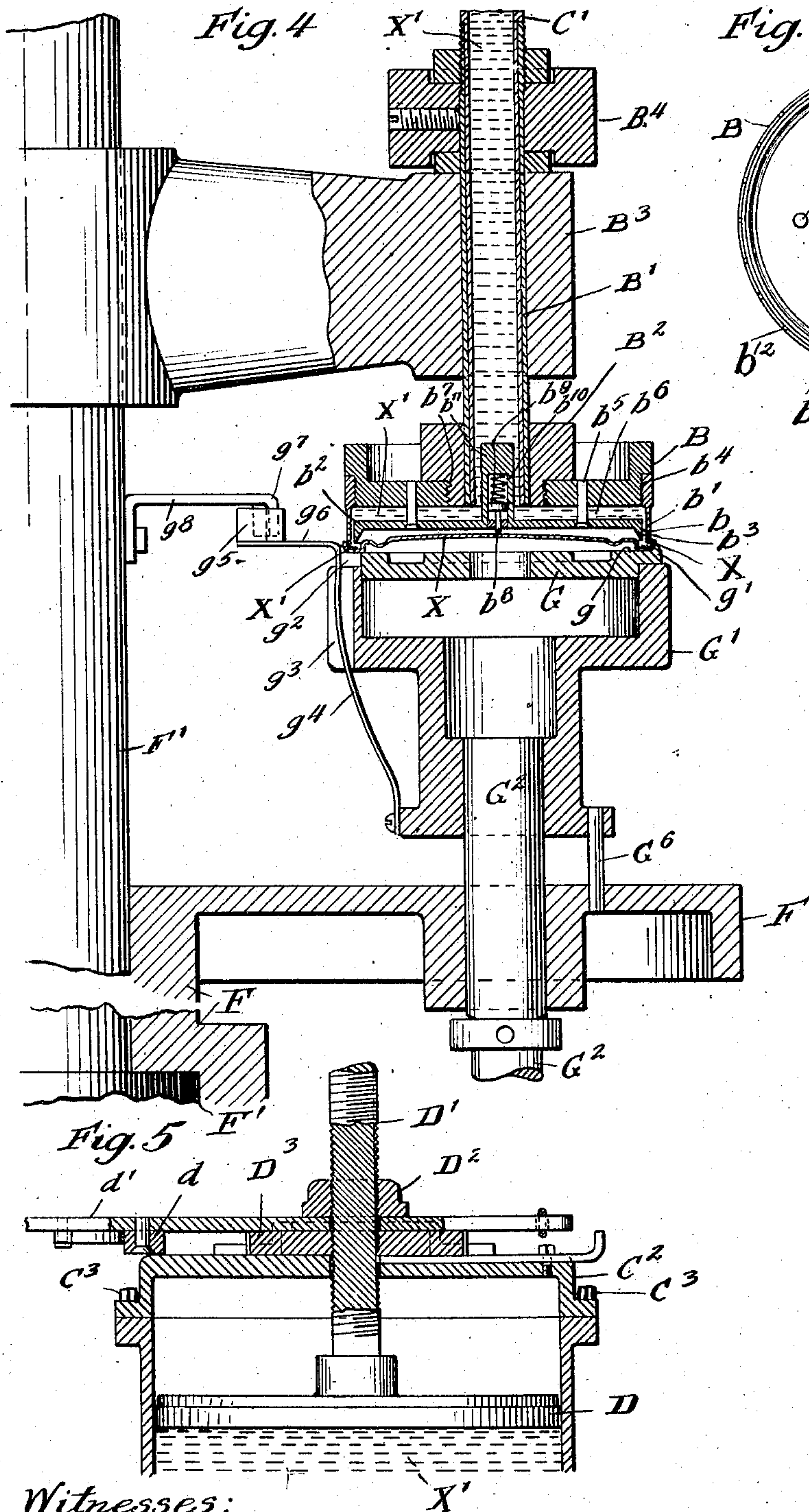
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UNITED STATES PATENT OFFICE.

LEE C. SHARP, OF PLATTSMOUTH, NEBRASKA, ASSIGNOR TO AMERICAN CAN COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW JERSEY.

CAN-COVER-COATING MACHINE.

No. 930,802.

Specification of Letters Patent.

Patented Aug. 10, 1909.

Application filed November 12, 1906. Serial No. 343,013.

To all whom it may concern:

Be it known that I, LEE C. SHARP, a citizen of the United States, residing at Plattsmouth, in the county of Cass and State of Nebraska, have invented a new and useful Improvement in Can-Cover-Coating Machines, of which the following is a specification.

My invention relates to improvements in machines for coating the seaming flanges of can heads or covers with packing composition.

The object of my invention is to provide a machine of a simple, efficient and durable construction, by means of which the seaming flanges of can heads or covers may be uniformly and evenly and rapidly and cheaply coated with a thin continuous coating of seam packing composition, and the coating applied to the outer annulus or portion of the seaming flange.

My invention consists in the means I employ as herein shown and described for accomplishing this result, the same comprising essentially a rotary carrier furnished with a plurality of vertically movable holders or chucks for the can heads or covers, an annular rotary discharge nozzle for the packing composition, corresponding in diameter to the seaming flange of the can head or cover, under and into registry with which the can heads or covers are brought, one by one, by the carrier, and against which rotating annular nozzle the seaming flange of the cover is momentarily pressed by the up and down movement of the holder, a tank or receptacle for the packing composition, a pipe connecting it with the annular nozzle, a feed device in the tank for forcing the composition through the connecting pipe to the nozzle, the same consisting preferably of a plunger having a screw threaded stem actuated by a threaded nut to which a slight turning movement is automatically imparted as each cover is pressed in turn against the nozzle, and a device for automatically discharging the coated covers from the holders in the carrier.

My invention also consists in the novel construction of parts and devices and in the novel combinations of parts and devices herein shown and described.

In the accompanying drawing, forming a part of this specification, Figure 1 is a side elevation of a can head or cover coating machine embodying my invention. Fig. 2 is a

plan view. Fig. 3 is a horizontal section on line 3—3 of Fig. 1. Fig. 4 is an enlarged detail vertical section through the annular discharge nozzle, on line 4—4 of Fig. 2. Fig. 5 is a detail vertical section through the packing composition tank or cylinder and Fig. 6 is a detail bottom view of the annular discharge nozzle for the packing composition.

In the drawing A represents the frame of the machine, B the annular discharge nozzle for the packing composition, C the tank or cylinder therefor, C¹ the connecting pipe, D the feed plunger for the packing composition, F the movable carrier for the can heads or covers, and G the vertically movable holders for the can heads or covers on the carrier.

The rotary annular discharge nozzle B has a narrow or contracted annular discharge orifice *b*, corresponding in diameter to the seaming flange *x* of the can head or cover X to which the coating composition is to be applied, and to the particular portion or annulus of such seaming flange upon which it is desired to have the packing composition coating located, the same being ordinarily or preferably the outer half or portion of the seaming flange. This annular discharge orifice *b* of the rotary nozzle B is, preferably, and most conveniently formed by and between a cylindrical sleeve *b*¹ and the periphery of the plate *b*², which is preferably furnished with a depending annular lip *b*³. The cylindrical sleeve *b*¹ is preferably furnished with a series of small notches *b*¹² in its lower edge to form vent apertures and thus prevent any tendency of the nozzle B to stick to the can head or suck up the composition from the can head when the nozzle and can head are separated. The sleeve *b*¹ is preferably secured to the head of the rotary nozzle by screw threads *b*⁴, and the plate *b*³ by pins or studs *b*⁵, a channel or open space *b*⁶ being left between the nozzle head B and the disk or plate *b*² for the packing composition or liquid X¹ to pass through. The rotary nozzle head B has a hollow shaft B¹ secured to the head B by the coupling B², which is preferably furnished with screw threads *b*⁷ to engage the nozzle head B. The hollow shaft B¹ of the rotary nozzle is journaled in a suitable supporting arm or bearing B³ on the frame of the machine, and it surrounds the stationary and non-rotary connecting pipe C¹ through which the pack-

ing composition flows from the tank or cylinder C to the annular rotary nozzle. The nozzle B is continuously rotated, preferably by a pulley B⁴ on its shaft through a belt B⁵ which passes over the connecting pulleys B⁶ B⁷.

The rotary nozzle B is preferably provided with a spring actuated presser foot, pin, or device b⁸, having a head b⁹, engaging a spring b¹⁰ in a spring holder b¹¹ on the plate or disk b², for the purpose of pressing or holding the can head or cover X more firmly in place on its holder or chuck G of the carrier F while the packing composition is being applied thereto by the rotary annular nozzle B.

The packing composition tank or cylinder C is preferably furnished with a closed head or cover C² secured thereto by bolts C³, and which constitutes a support or bearing for the screw stem D¹ of the feeder or plunger D by which the packing composition or liquid is forced from the tank or cylinder C into and through the nozzle B upon the seaming flange of the can head or cover.

The follower or plunger D is preferably intermittently actuated as the packing composition is applied to each cover. The necessary slight impulse is thus imparted to the plunger D preferably by means of a screw threaded stem D¹ with which the plunger D is furnished, and which is engaged by a rotating nut D², having a ratchet D³ engaged by a pawl d on the pawl arm or lever d¹, and which is intermittently operated as required.

The movable carrier F for the can heads or covers is preferably a rotatable turret, and intermittently rotated on its stationary or non-rotating shaft F¹ from the driving shaft H through the connecting gears h on the driving shaft h¹ on the upright shaft h², and the Geneva stop mechanism h³ h⁴ h⁵, the radially slotted stop wheel h⁵ of the Geneva movement being on the upright stationary shaft F¹ upon which the carrier F turns.

The can head or cover holders G on the carrier F are each intermittently moved up and down or operated as required through a reciprocating head G¹, having a stem or shaft G² which is engaged by a vibrating arm or lever G³, furnished with a friction roller G⁴ engaging a cam G⁵ on the upright shaft h². The head G¹ has a guide pin G⁶. The upper face g of the can head holder or chuck G is furnished with an annular lip g¹ which fits and surrounds the can head or cover and centers it in place. The holder G is preferably removably secured to the head G¹, so that it may be readily replaced with holders of different shapes or sizes for operating upon can covers of different diameters, and the rotary annular nozzle B is also for that reason removably secured to the coupling B² by which it is connected to its hollow driving shaft. The can head or cover holder G and its head or support G¹ are provided with slots

g² g³ to receive the ejector spring g⁴ by which the coated cover is ejected from the holder G. This ejector spring g⁴ is furnished with a cam or projection g⁵ on its outwardly bent arm g⁶, which engages a stationary cam or projection g⁷ on the arm or bracket g⁸, which is secured to the stationary upright shaft F¹ so that as the carrier rotates these inter-engaging cams or projections will push the ejector g⁴ inward or toward the can cover, and thus push it off its holder after it has been coated.

The arm or lever d¹ is provided with an upright arm d², having a pin d³ which engages a pin g⁹ on the cam G⁵ and thus vibrates said feed plunger operating arm d¹ at each revolution of the cam G⁵, and thereby causes the requisite amount of packing composition to be deposited upon the seaming flange of the can head or cover.

I claim:

1. In a machine for coating the seaming flanges of can heads or covers with packing composition, the combination with a rotary annular nozzle, a tank for the packing composition connected with the nozzle, a feed plunger in said tank for the packing composition, a movable carrier for the can heads or covers, and movable can head or cover holders on the carrier, substantially as specified.

2. In a machine for coating the seaming flanges of can heads or covers with packing composition, the combination with a rotary annular nozzle, a tank for the packing composition connected with the nozzle, a feed plunger in said tank for the packing composition, a movable carrier for the can heads or covers, movable can head or cover holders on the carrier, means for intermittently moving the carrier, means for intermittently operating the can cover holders on the carrier, and means for intermittently operating the feed plunger for the packing composition, substantially as specified.

3. In a can head or cover coating machine, the combination with a holder for the can head or cover, of a rotating annular nozzle above the holder, said nozzle having an annular discharge orifice conforming to the flange of the can head or cover to be coated, substantially as specified.

4. In a can head or cover coating machine, the combination with a holder for the can head or cover, of an annular discharge nozzle for the packing composition above the holder, said nozzle having an annular discharge orifice conforming to the flange of the can head or cover to be coated, substantially as specified.

5. In a can head or cover coating machine, the combination with a holder for the can head or cover, of a rotating annular nozzle above the holder, and means for reciprocating the holder, said nozzle having an annular discharge orifice conforming to the flange of

the can head or cover to be coated, substantially as specified.

6. In a can head or cover coating machine, the combination with a holder for the can head or cover, of an annular discharge nozzle for the packing composition above the holder, and means for reciprocating the holder, said nozzle having an annular discharge orifice conforming to the flange of the can head or cover to be coated, substantially as specified.

7. In a can head or cover coating machine, the combination with a holder for the can head or cover, of an axially rotating annular nozzle, a tank for the packing composition and a feed plunger therein, substantially as specified.

8. In a can head or cover coating machine, the combination with a holder for the can head or cover, of an axially rotating annular nozzle, a tank for the packing composition, a feed plunger therein, and means for intermittently operating the feed plunger, substantially as specified.

9. In a machine for coating can heads or covers with a packing composition, the combination with a holder for the can head or cover, of a rotary nozzle above the holder having an annular discharge orifice corresponding in diameter and conforming to the flange of the head or cover to be coated, substantially as specified.

10. In a machine for coating can heads or covers with a packing composition, the combination with a holder for the can head or cover, of a rotary nozzle having an annular discharge orifice corresponding in diameter to the flange of the head or cover to be coated, said rotary nozzle having a sleeve and a circular disk surrounded by said sleeve forming said annular orifice, substantially as specified.

11. In a machine for coating can heads or covers with a packing composition, the combination with a holder for the can head or cover, of a rotary nozzle having an annular discharge orifice corresponding in diameter to the flange of the head or cover to be coated, said rotary nozzle having a sleeve and a circular disk surrounded by said sleeve, forming said annular orifice, and said disk having a depending annular lip, substantially as specified.

12. In a machine for coating can heads or covers with a packing composition, the combination with a holder for the can head or cover, of a rotary nozzle having an annular discharge orifice corresponding in diameter to the flange of the head or cover to be coated, said rotary nozzle having a sleeve and a circular disk surrounded by said sleeve forming said annular orifice, said disk having a presser pin to engage the can head or cover, substantially as specified.

13. In a can head or cover coating machine, the combination with a reciprocating

holder, of a rotary nozzle above the holder having an annular discharge orifice conforming to the flange of the head or cover to be coated, substantially as specified.

14. In a can head or cover coating machine, the combination with a reciprocating holder, of a rotary nozzle having an annular discharge orifice, a tank for the packing composition, a connecting pipe from said tank to said nozzle, and a feed plunger in the tank, substantially as specified.

15. In a can head or cover coating machine, the combination with a reciprocating holder, of a rotary nozzle having an annular discharge orifice, a tank for the packing composition, a connecting pipe from said tank to said nozzle, a feed plunger in the tank, and means for intermittently operating the feed plunger, substantially as specified.

16. In a can head or cover coating machine, the combination with a reciprocating holder, of a rotary nozzle having an annular discharge orifice, a tank for the packing composition, a connecting pipe from said tank to said nozzle, a feed plunger in the tank, a screw threaded stem for said plunger, and an intermittently rotating screw threaded nut for actuating the feed plunger, substantially as specified.

17. In a machine for coating the seaming flanges of can heads or covers with packing composition, the combination with a rotary annular nozzle, a tank for the packing composition connected with the nozzle, a feed plunger in said tank for the packing composition, a movable carrier for the can heads or covers, movable can head or cover holders on the carrier, and an ejector for the coated covers, substantially as specified.

18. In a can head or cover coating machine, the combination with a rotary carrier, of a plurality of horizontally disposed movable holders thereon, and an annular discharge nozzle for the packing composition, conforming to the flange of the head or cover to be coated, substantially as specified.

19. In a can head or cover coating machine, the combination with a rotary carrier, of a plurality of horizontally disposed movable holders thereon, an annular discharge nozzle for the packing composition conforming to the flange of the head or cover to be coated, and an ejector for the coated can covers, substantially as specified.

20. In a can head or cover coating machine, the combination with a rotary carrier, of a plurality of movable holders thereon, an annular discharge nozzle for the packing composition, an ejector for the coated can covers, a receptacle for the packing composition, a feed plunger therein having a screw threaded stem, and an intermittently operated nut for actuating the feed plunger, substantially as specified.

21. In a can head or cover coating machine, the combination with a can head or cover holder, of a discharge nozzle above the holder for the packing composition having a
5 discharge orifice conforming in shape to the seaming flange of the can head or cover upon which the packing composition is to be applied, substantially as specified.

22. In a can head or cover coating machine, the combination with a can head or
10 cover holder, of a discharge nozzle above the holder for the packing composition having a discharge orifice conforming in shape to the seaming flange of the can head or cover upon
15 which the packing composition is to be applied, and means for reciprocating said holder, substantially as specified.

23. In a can head or cover coating machine, the combination with a can head or
20 cover holder, of a discharge nozzle for the

packing composition having a discharge orifice conforming in shape to the seaming flange of the can head or cover upon which the packing composition is to be applied, means for reciprocating said holder, a tank
25 for the packing composition and a feed plunger therein, substantially as specified.

24. In a can head or cover coating machine, the combination with a can head or cover holder, of a discharge nozzle for the
30 packing composition having a discharge orifice conforming in shape to the seaming flange of the can head or cover upon which the packing composition is to be applied, a tank for the composition, and a feed plunger
35 therein, substantially as specified.

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Witnesses:

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